Indiana Course-Aligned Assessment
Chemistry – Blueprint

Standard	Description	Percent Range *
1 – Properties and States of Matter	Describe the nature of physical and chemical properties and changes of matter. Compare and contrast states of matter at the molecular level.	10-20%
2 – Atomic Structure and the Periodic Table	Describe how the properties and arrangements of the subatomic particles contribute to the structures of atoms. Describe how the structure of the periodic table reflects the numbers of electrons and protons and the configuration of electrons in an atom.	10-20%
3 – Bonding and Molecular Structure	Describe how the configuration of electrons within an atom determines its interactions with other atoms. Describe the attractive forces among molecules and their effect on chemical and physical properties.	15-25%
4 – Reactions and Stoichiometry	Use balanced chemical equations and the mole concept to determine the quantities of reactants and products.	20-30%
5 – Behavior of Gases	Using the kinetic molecular theory, describe and explain the behavior of ideal gases. Using the ideal gas equation of state $PV = nRT$, examine the relationship among the number of moles, volume, pressure and temperature for ideal gases.	0-10%
6 – Thermochemistry	Recognize that chemical reactions result in either the release or absorption of energy. Apply the law of conservation of energy.	0-10%
7 – Solutions	Describe the composition and characteristics of solutions. Identify the factors that qualitatively affect solubility, reactions rates and dynamic equilibrium.	5-15%
8 – Acids and Bases	Use acid-base definitions to identify acids and bases when given their formulas and reactions. For any aqueous solution, explain the meaning of the value indicated by the pH scale in terms of the hydrogen ion concentration.	0-5%
9 – Organic Chemistry and Biochemistry	Describe the unique nature of carbon atoms' ability to bond to one another and other elements, which forms countless carbon-based substances and macromolecules.	0-5%

* This range represents the approximate emphasis for each reporting category on the assessment.